Technical Information

for Macintosh LC 520

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▲ **Warning:** If you have a problem with your computer and nothing presented in the manuals that came with the computer solves the problem, take the computer to your authorized Apple dealer or service provider. If you attempt to repair the computer yourself, any damage you may cause to the computer will not be covered by the the limited warranty on your computer. Contact your authorized Apple dealer or service provider for additional information about this or any other warranty question. ▲

Specifications

Main unit

Processor

- MC68030, 32-bit architecture, 25-megahertz (MHz) clock frequency (includes built-in memory management unit)
- provides internal socket for an optional floating-point unit

Memory

- 4 megabytes (MB) of random-access memory (RAM), expandable to 36 MB
- 1 MB of read-only memory (ROM)
- 256 bytes of parameter memory

Video RAM

- 512K video RAM, upgradable to 768K
- With 512K video RAM, you can display up to 256 colors (8-bit color).
- With 768K video RAM, you can display thousands of colors (16-bit color).

Disk drives

- Built-in Apple SuperDrive 1.4 MB floppy disk drive
- Internal 40, 80, or 160 MB Apple SCSI hard disk drive
- Optional external SCSI hard disk drives (several capacities available)
- Optional internal CD-ROM drive

Video display

- Built-in 14-inch diagonal, high-resolution Trinitron® color, 640-by-480-pixel, bitmapped display

Interfaces

- Two Apple Desktop Bus (ADB) ports for keyboard, mouse, and other devices
- Two RS-232/RS-422 serial ports, 230.4 kilobits (Kbits) per second maximum (up to 920 Kbits per second if clocked externally), for serial printers, modems, and other serial devices and AppleTalk networks
- SCSI interface for SCSI hard disks and other SCSI devices
- Sound output port capable of delivering stereo sound
- Front headphone jack capable of delivering stereo sound
- Sound input port for monaural sound input
- Internal expansion slot for processor-direct expansion card

Sound generator

- Records at 11 kHz or 22 kHz sample rate
- Plays back at 11 kHz or 22 kHz sample rate
- Two speakers with enhanced stereo sound
- Allows playing of ordinary audio compact discs

Input

- Line voltage: 100 to 240V AC, RMS automatically configured
- Frequency: 50 to 60 Hz ± 3 Hz single phase
- Power: 120 W maximum

Clock/Calendar

- CMOS custom chip with long-life lithium battery

Fan

- Operational flow: 9 to 12 CFM axial

Keyboard

- Supports all Apple Desktop Bus keyboards

Mouse

- Apple Desktop Bus mouse II: mechanical tracking, optical shaft, or contact encoding

Size and weight

Weight	Height	Width	Depth
Main unit			
18.4 kg 40.5 lb.	443.4 mm 17.45 in.	344 mm 13.5 in.	419.8 mm 16.5 in.
Mouse			
0.10 kg 4 oz.	33 mm 1.3 in.	61.7 mm 2.4 in.	107.3 mm 4.2 in.
Keyboard			
0.89 kg 1.96 lb.	32.5 mm 1.3 in.	405.3 mm 16.0 in.	150.6 mm 5.9 in.

Apple Desktop Bus power requirements

- Maximum power draw for all ADB devices is 500 milliamperes (mA)
- Mouse draws 10 mA
- Keyboard draws 25 mA

❖ *Note:* The maximum number of ADB devices recommended in a daisy-chain connected to the ADB port is three. ❖

RAM configurations

RAM in the Macintosh LC 520 is provided both on the logic board (4 MB) and in packages called Single Inline Memory Modules, or SIMMs. The SIMMs contain dynamic RAM chips on a single circuit board, with electrical "finger" contacts along one edge that plug into the SIMM sockets on the computer's logic board.

Macintosh LC 520 computers can work with any of several RAM configurations, depending on the density of the RAM chips that are mounted on the SIMMs. The Macintosh LC 520 can use only 1, 2, 4, 8, 16, or 32 MB RAM SIMMs.

△ **Important:** Macintosh LC 520 SIMMs should be fast-paged mode 80 nanoseconds (ns) RAM access time or faster. The slower 100 ns, 120 ns and 150 ns SIMMs available for some other models of Macintosh computers will not work in the Macintosh LC 520. The Macintosh LC 520 uses a 72-pin DRAM SIMM. △

▲ **Warning:** To avoid damage to your computer, Apple Computer recommends that only an authorized Apple dealer or service provider install additional RAM. If you attempt to install additional RAM yourself, any damage you may cause to your equipment will not be covered by the limited warranty on your computer. See your authorized Apple dealer or service provider for additional information about this or any other warranty question. ▲

Microphone

- The internal microphone is an electret type, omnidirectional microphone that is powered by the computer.

Environment

Operating temperature

- 10° C to 40° C (50° F to 104° F)

Storage temperature

- –40° C to 47° C (–40° F to 116.6° F)

Relative humidity (operating)

- 20% to 95% (noncondensing)

Altitude

- 4572 m (15,000 ft.) maximum (non-operating)
- 3048 m (10,000 ft.) maximum (operating)

CD-ROM drive

Disc

■ Data surfaces	1
■ Disc diameter	12 cm
■ Disc center hole	15 mm
■ Thickness	1.2 mm
■ Track pitch	1.6 microns (15,875 tracks per in.)
■ Scanning velocity	1.2 to 1.4 meters per second
■ Rotation speed	Varies over radius
Normal speed	~530 to 230 rpm
Double speed	~1060 to 460 rpm
■ Latency (average)	Varies over radius
Normal speed	~55 to 130 milliseconds
Double speed	~27.5 to 65 milliseconds
■ Blocks per rotation	~8.4 to 19.5 variable
■ Average access time	
Normal speed	360 milliseconds
Double speed	295 milliseconds

Data

■ Data capacity	656 MB, Mode 1 748 MB, Mode 2
■ Number of blocks per disc	270,000 (typical)
■ Data per block	2048 bytes, Mode 1 2336 bytes, Mode 2
■ Address description	Minutes, seconds, frames

Audio capacity

■ Playing time	74 minutes and 42 seconds

Data streaming and transfer rates

■ Blocks per second	
Normal speed	75 blocks per second
Double speed	150 blocks per second
■ User bytes per second	
Normal speed	150K, Mode 1 171.1K, Mode 2
Double speed	300K, Mode 1 342.2K, Mode 2
■ SCSI Bus Burst Rate	2.5 MB per second (over one block)

Modes supported

■ CD-Audio	
■ CD-ROM	Modes 1 and 2
■ CD-ROM XA	Mode 2, Forms 1 and 2
■ CD-I	Mode 2, Forms 1 and 2
■ CD-I Ready	
■ CD-I Bridge	
■ Photo CD	Single or multiple sessions

Laser

■ Type	Semiconductor laser GaAlAs
■ Wavelength	780 nanometers (nm)
■ Output power	0.6 milliwatts (mW)
■ Beam divergence	53.4° ± 1.5°

Environmental

Noise (maximum)

■ Drive on (seek)	<50 dB
Drive on (non-seek)	<46 dB

Temperature

■ Operating temperature	+5° C (+41° F) to +50° C (+122° F)
■ Storage (6 months)	–30° C (–22° F) to +50° C (+122° F)
■ Transit (72 hours)	–40° C (–40° F) to +65° C (+149° F)

Humidity

■ Operating	5% to 90% noncondensing
■ Storage	5% to 95% noncondensing

Power requirements

■ Voltage	+5V DC ± 5% +12V DC ± 10%

Power consumption

■ +5V DC	350 mA (maximum)
+12V DC	780 mA (average) 1.5 A (peak)

Interface

■ SCSI	One 50-pin connector

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